



PATENT SPECIFICATION

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COMPLETE SPECIFICATION

Chlorine Dioxide

We, **FARBENFABRIKEN BAYER**, of 22c, Leverkusen-Bayerwerk, Germany, a Company recognised under the Laws of Germany, do hereby declare the invention, for which we pray that a patent may be granted to us, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to an electrolytic process for the production of chlorine dioxide substantially free from chlorine and is an improvement in or modification of the invention of our co-pending Application No. 692,763.

The parent Specification describes and claims a process for the production of substantially chlorine-free chlorine dioxide by electrolysis of an aqueous solution of a chlorite, such as sodium chlorite, wherein the electrolysis is carried out in the presence of a water-soluble sulphate.

In carrying out the process of the parent Specification a mixture of a chlorite and a water soluble sulphate is conveniently employed for the preparation of the electrolytic bath required for the production of the chlorine-free chlorine dioxide. This mixture is dissolved in a controlled quantity of water and the electrolysis is initiated, resulting in practically chlorine-free chlorine dioxide which can be used for instance for bleaching flour, oil and textile materials.

Further investigations have now shown that practically chlorine-free chlorite can be obtained, not only by electrolysis of aqueous solutions containing both chlorite and sulphate, but also by electrolysis of an electrolytic bath produced by dissolving in water mixtures of a chlorite and a water-soluble salt of an inorganic oxy-acid, other than sulphuric acid.

Accordingly the present invention provides

a process for the manufacture of chlorine dioxide substantially free of chlorine, which comprises electrolysing an aqueous solution containing a chlorite and a water-soluble salt of an inorganic oxy-acid other than sulphuric acid. 45

Examples of water-soluble salts of inorganic oxy-acids which may be used in the process of the invention are sodium nitrate, sodium nitrite, sodium phosphate, sodium chlorate, sodium perchlorate, sodium carbonate and sodium acetate. 50

In carrying out the process of the present invention and the process of the parent Specification it has been found advantageous to use for the electrolysis an aqueous bath prepared from a salt mixture consisting of 10—50% by weight of a chlorite, such as sodium chlorite, and 90—50% by weight of a water-soluble salt of an inorganic oxy-acid. 60

What we claim is:—

1. A process for the manufacture of chlorine dioxide substantially free from chlorine, which comprises electrolysing an aqueous solution containing a chlorite and a water-soluble salt of an inorganic oxy-acid other than sulphuric acid. 65

2. A salt mixture for use in the preparation of an electrolytic bath for the manufacture of chlorine dioxide substantially free of chlorine, said salt mixture consisting of 10—50 per cent. by weight of a chlorite and 90—50 per cent. by weight of a water-soluble salt of an inorganic oxy-acid. 70

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